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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/750,757	01/05/2004	Jau-Jan Deng	BHT-3226-51	1687
7590 12/14/2004				
TROXELL LAW OFFICE PLLC				
SUITE 1404				
5205 LEESBURG PIKE				
FALLS CHURCH, VA 22041				
		EXAMINER		
		CHERRY, EUNCHA P		
		ART UNIT		PAPER NUMBER
		2872		

DATE MAILED: 12/14/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/750,757

Applicant(s)

DENG ET AL.

Examiner

EUNCHA P. CHERRY

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-6 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-6 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 05 January 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. ____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date ____. | 6) <input type="checkbox"/> Other: ____.  |

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**DETAILED ACTION**

***Claim Objections***

1. Claims 1-6 are objected to because of the following informalities: the phrase 'may be' in claims 1, 4 and 6 renders claim unclear because it is not clear if what's following the phrase is a part of the claim or not. Appropriate correction is required.

***Claim Rejections - 35 USC § 103***

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

3. Claims 1-6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lee (US Patent No. 6,724,509 B2).

Lee discloses a laser scanning unit (Fig. 1), a semiconductor laser (100), a collimator (640a), and an f $\theta$  lens (310, 320); an polygonal mirror (800) that is being disposed between said collimator and said f $\theta$  lens, so that laser beams

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emitted from said semiconductor laser and passed through said collimator form parallel beams that are directly projected.

However, Fig. 1 of Lee does not disclose the a micro electronic mechanical mirror that oscillating in harmonic motion at regular oscillating amplitude to control a direction in which said laser beams are reflected from said oscillatory mirror onto the  $f\theta$  lens, so that a scanning linearity effect required by said laser scanning unit may be achieved. The  $f\theta$  lens may be two-element scanning lens (see 310 and 320).

Fig. 8 of Lee discloses a micro electronic mechanical mirror that oscillating in harmonic motion at regular oscillating amplitude to control a direction in which said laser beams are reflected from said oscillatory mirror, so that a scanning linearity effect required by said laser scanning unit may be achieved (by 80, column 7, lines 23-30). The collimator and the MEMS oscillatory mirror are provided in said laser scanning unit without any cylindrical lens disposed therebetween (see Fig. 8). The laser beams emitted from the semiconductor laser have a central axis that is aligned with a mechanic center of the MEMS oscillatory mirror (see Fig. 8). It would have been obvious to use MEMS oscillatory mirror as taught by disclosure of Lee reference for the purpose of precise controlling of deflected laser beams.

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**Conclusion**

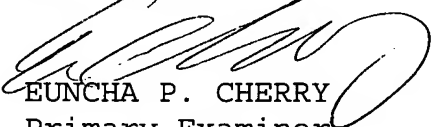
4. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Hagen (US Patent No. 6,812,669 B2) discloses the MEMS oscillatory mirror having a controlling device that uses harmonic distortion characteristics in order to precisely and accurately control movement of the mirror.

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to EUNCHA P. CHERRY whose telephone number is 571-272-2310. The examiner can normally be reached on M-F 6:30-4:00, alternate Fridays off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, DREW DUNN can be reached on 571-272-2312. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



EUNCHA P. CHERRY  
Primary Examiner  
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